

USSR

ASOYAN, L. M., USSR Authors' Certificate No 249762, Filed 2 April 1968, Published 15 January 1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 123P, by L. Sh.)

of the first flip-flop of the next digit. The ones outputs of the low-order digit flip-flop and the second flip-flops of the next digits are used as outputs corresponding to binary code. The circuit suggested combines the functions of a Barker code to parallel binary code converter with the functions of memorization of the binary code. One illustration.

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1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--LAW OF DISPLACEMENT OF INFRARED ABSORPTION BANDS OF SOME MINERALS  
-U-  
AUTHOR--(U2)-POVARENYYKH, A.S., GEVORKYAN, S.V.  
COUNTRY OF INFO--USSR  
SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(2), 118-21  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--MINERAL, IR ABSORPTION  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/0721 STEP NO--UR/0442/70/032/002/0118/0121  
CIRC ACCESSION NO--AT0122800  
UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70  
 CIRC ACCESSION NO--AT0122600  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEFINITE DEPENDENCE WAS DETECTED  
 BETWEEN THE POSITION OF CHARACTERISTIC IR ABSORPTION BANDS AND THE MAIN  
 CRYSTALLOCHEM. PARAMETERS OF THE MINERALS DURING A STUDY OF 2  
 ISOSTRUCTURAL MINERAL GROUPS HAVING THE GENERAL FORMULAS OF  $R \text{ SUB5}$   
 $\text{PRIME2 POSITIVE (XO SUB4) SUB3 Z}$  FOR MINERALS OF THE APATITE GROUP  
 (APATITE, PYROMORPHITE, MIMETITE, AND VANADINITE) AND  $R \text{ SUB2 PRIME2}$   
 $\text{POSITIVE (XO SUB4) Z}$  FOR THE LIBETHENITE GROUP (LIBETHENITE, OLIVENTITE,  
 AND ADAMITE). THE WAVELENGTH OF THE CHARACTERISTIC IR ABSORPTION BAND  
 WAS RELATED TO THE CRYSTALLOCHEM. PARAMETERS BY THE FORMULA,  $\text{UPSILON}$   
 $\text{EQUALS A(SIGMA RAD PLUS SIGMA CAT) CM PRIME NEGATIVE1}$  WHERE A IS A  
 PROPORTIONALITY COEFF. DIFFERENT FOR VARIOUS ABSORPTION BANDS AND THEIR  
 STRUCTURES WITHIN THE SAME ISOSTRUCTURAL GROUP, AND SIGMA RAD AND SIGMA  
 CAT ARE THE STRENGTHS OF BONDS FOR RADICAL AND CATION, RESP.  
 FACILITY: INST. GEOKHIM. FIZ. MINER., KIEV, USSR.

UNCLASSIFIED

1/3 008

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--PHOSPHORITE NODULES IN BOTTOM SEDIMENTS OF THE GULF OF ADEN -U-

AUTHOR--(02)-GEVORKYAN, V.KH., CHUGUNNY, YU.G.

COUNTRY OF INFO--USSR, INDIAN OCEAN

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 307-314

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND  
MARINE ENGR

TOPIC TAGS--BOTTOM SEDIMENT, OCEAN, OCEAN BOTTOM SAMPLING, MINERAL MODULE,  
METAL OXIDE/(U)MIKHAIL LOMONOSOV SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/1378

STEP NO--UR/0213/70/010/002/0307/0317

CIRC ACCESSION NO--AP0109451

UNCLASSIFIED

2/3 .008

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIXTH CRUISE OF THE R-V M. LOMONGSOV TO THE INDIAN OCEAN IN 1966 GAVE 326 PHOSPHORITE NODULES OF 1 KG AND 109 G TOTAL WEIGHT TAKEN FROM 210 M DEPTH IN THE VICINITY OF THE SOCCUTRA ISLAND IN THE GULF OF ADEN. THE MORPHOLOGICAL PECULIARITIES OF THE NODULES COLLECTED AND THE CONDITIONS OF THEIR OCCURRENCE PROMPT A CONCLUSION THAT THE NODULES IN QUESTION ARE PRODUCTS OF EROSION AND REDEPOSITION OF BEDROCK CONTAINING PHOSPHORITE NODULES. TIME OF THE FORMATION OF THE NODULES HAS NOT BEEN ESTABLISHED, THEIR EVACUATION AND REDEPOSITION ARE PROCEEDING EVEN NOWADAYS. THE MORPHOLOGICAL AND PETROGRAPHIC STUDIES OF THE NODULES HAVE SHOWN THEIR COMPOSITION AS A MIXTURE OF MOSTLY FINE DISPERSED ISOTROPIC PHOSPHATE MATTER AND FINE CRYSTALLINE CALCITE. SUCH MINERALS AS QUARTZ, CHALCEDONY AND APATITE HAVE BEEN FOUND TO COMPOSE THE NODULES WITH A RARER OCCURRENCE OF PYROXENE, FELDSPAR, ZIRCON AND OTHER MINERALS. THE CHEMICAL ANALYSIS HAS REVEALED THE FOLLOWING OXIDES AS THE CONSTITUENTS OF THE NODULES (IN PERCENT): SIO SUB2-2.79; TIO SUB2-0.22; AL SUB2 O SUB3-3.18; FE SUB2 O SUB3 5.89; FEO-0.88; MNO-0.18; MGO-0.54; CAO-44.12; NA SUB2 O-1.07; K SUB2 O-0.32; P SUB2 O SUB5-23.58; H SUB2 O SUB4YGR-1.59; H SUB2 O SUBCRYST. PLUS PPP-2.25; CO SUB2-8.10; TOTAL-101.05; F-1.34; C WAS NOT FOUND. THE QUANTITATIVE SPECTRAL STUDIES HAVE SHOWN THE FOLLOWING ELEMENTS (IN PERCENT); NI-0.002; CO-0.001; V-0.01; CR-0.03; ZR-0.003; CU-0.0001; AG-0.0001; LA-0.02; Y-0.02; YB-0.001; SR-0.6; BA-0.08. THE ANALYSIS HAS BEEN MADE FOR 40 ELEMENTS.

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PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109451

ABSTRACT/EXTRACT--LARGE AMOUNTS OF ADMIXTURES, INCLUDING 10 TO 15PERCENT CALCITE, CLAY MATTER, FERROUS OXIDES AND QUARTZ, MAKE IT IMPOSSIBLE TO DETERMINE A MINERALOGICAL FORM OF PHOSPHATE MATTER. BASED ON THE ACTIVE REACTION OF NODULES WITH HYDROCHLORIC ACID, PHOSPHATE ISOTROPY AND EASY SOLUBILITY, THE PRESENCE OF APATITE, THE AUTHORS ARE INCLUDED TO REGARD THE PHOSPHORITES UNDER STUDY AS A MANY COMPONENT SYSTEM WITH A PREVALENCE OF THE ISOTROPIC DIFFERENCE OF CARBONATAPATITE-FLUORINAPATITE CULLOPHANE. THIS DISCOVERY OF PHOSPHORITES IS THE FIRST FINDING OF THE MASS CONCENTRATIONS OF PHOSPHORITE NODULES IN THE NORTHERN PART OF THE INDIAN OCEAN. FACILITY: INSTITUT GEOLOGICHESKIKH NAUK AN USSR, KIEV.

UNCLASSIFIED

USSR

UDC 632.95

FEL'DMAN, I. N., MALISHKEVICH, Yu. Ya., FILIMONOV, B. F., and GEYD, Yu. P.

"An Information-Search System for the Technology of Pesticides"

V. sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- Collection of Works), No 3, Moscow, 1973, pp 155-159 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N502)

Translation: The principles underlying the preparation of punch cards for pesticides are described. The cards contain information on the classes of chemical compounds, process flow diagram, preparatory forms, toxicology, effectiveness, residues, manufacturing companies, prices on the world market.

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USSR

UDC 632.95

RYZHKOV, A. A., GEYD, YU. P., BABIN, YE. P., SVIRIDENKO, A. S., CHEF'AVSKAYA, L. A.

"Analysis of 2-Methoxy-3,6-dichlorobenzoic Acid by Gas-Liquid Chromatography"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zaprvaz-  
neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-  
Union Conference on the Investigation of Pesticide Residues and Preventive

Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 116-119 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N504)

Translation: For extraction of 2-MeO-3,6-Cl<sub>2</sub>C<sub>6</sub>H<sub>2</sub>COOH (I) from an aqueous solution, 1 ml of dilute H<sub>2</sub>SO<sub>4</sub> (1:1) is added to 100 ml of sample, it is agitated for 5 minutes, and extracted with 100 ml of ether. For extraction of the compound from the soil, 50 ml of ether and 1 ml of H<sub>2</sub>SO (1:1) are added to 50 grams, it is agitated for 5 minutes and filtered. By a mixture of ether and H<sub>2</sub>SO<sub>4</sub>, the I is extracted from the plant mass. The extracts are dried over Na<sub>2</sub>SO<sub>4</sub>, they are concentrated to a volume of 3-5 ml, methylated with a solution of CH<sub>2</sub>N<sub>2</sub> in ether (15 minutes) and evaporated. The residue is analyzed on a chromatograph with a flame-ionization detector in a column with TND-TS-M of a  
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USSR

RYZHKOV, A. A., et al., Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zashchazneniya imi produktov pitaniya, kormov i vnesh. sredy, Tallin, 1971, pp 116-119

0.17-0.18 mm fraction treated with a 4% liquid phase PMFS-4 or SKFT. For the calculation, the internal standard method was used for which  $2,4\text{-Cl}_2\text{C}_6\text{H}_3\text{COOMe}$  was applied. The sensitivity of the method was 0.4-1.5 mg/kg.

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USSR

UDC 678.746.22.06-405.8

NEKHOROSHEV, A. V., Doctor of Technical Sciences, MERKIN, A. P., Candidate of Technical Sciences, GEYDANS, I. U., PUCHKOV, V. N., Engineers

"Styropore Concrete in Remote Regions and the Arctic"

Moscow, Stroitel'nye Materialy, No 1, Jan. 1973, pp 18-20.

Abstract: The conditions of construction in the Arctic require the development of insulating structural materials. One such material is styropore concrete, developed by "Arktikstroy" Trust. This concrete is made with an artificial filler made of expanded polystyrene beads. Experience has shown that the production of styropore concrete products does not require additional capital investment or the construction of special plants. Styropore concrete has certain technological and economic advantages over other light concretes made with porous fillers: the lightness of the polystyrene beads allows the density of the concrete to be varied widely; the polystyrene beads have minimum water absorption; the raw material for expansion into beads can be economically transported over long distances; the heat conductivity on the material is very low.

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Nitrogen Compounds

USSR

UDC 541.127:547.486.41

RIZAYEV, R. G., SHEYNIN, V. Ye., MEKHIYEV, S. D., and GEYDARLY, N. I.

"Investigation of the Kinetics of Ammonolysis of m-Xylene by a Gradientless Method"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

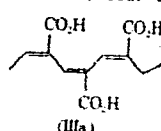
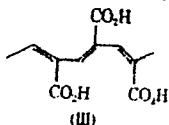
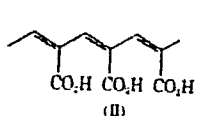
Abstract: In this paper the authors study the kinetics of ammo-oxidation of m-xylene over a vanadium oxide catalyst (6%  $V_2O_5$  and 2%  $MnO_2$ ) applied to calcined aluminum oxide in a system with continuous circulation. To determine the fraction of homogeneous reaction, noncatalytic experiments were conducted under conditions similar to the catalytic experiments. More than 90% of the m-xylene was unreacted. Use of the gradientless method made it possible to find the reaction rates in differential form. After the onset of the steady state, the reaction rate was determined from the formula  $\omega = n/G \cdot \Delta t$ , where  $n$  is the number of moles of reacted or formed products in time  $\Delta t$ ,  $G$  is the amount of catalyst in grams, and  $\Delta t$  is the time from the instant of the onset of the steady state in hours. The effect which the concentrations of  $O_2$  and  $NH_3$  have on the bulk conversion of m-xylene, and on the rate of formation of main products and byproducts of the reaction was studied. It was found that

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Acc. Nr. **AP0100204** Abstracting Service:  
CHEMICAL ABST. 6-70

Ref. Code  
**UR0062**

/ 111851j Decarboxylation of polymeric acids with conjugated bonds. Yandarova, M. N.; Gelderikh, M. A.; Krentsel, B. A. (Inst. Neftekhim. Sin. im. Topchiyeva, Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1970, (1), 78-84 (Russ). The irradiation of  $\text{HC}=\text{CCO}_2\text{H}$  (I) in the solid phase gives *trans,trans*-poly(propionic acid) (II); in the liq. phase, *trans,cis*- (III) and *cis,trans*-poly(propionic acid) (IIIa) are obtained (G. V. Khutareva, et al., 1965). The decarboxylation of II, III, IIIa,



poly(acrylic acid) (IV) and  $\text{I-H}_2\text{C:CHCO}_2\text{H}$  copolymers was compared. The conjugation reduces the decarboxylation activation energy of II, III, and IIIa to 6-12.5 kcal/mole as compared with 42.7 kcal/mole for IV. The configuration also affects the decarboxylation rates; III in which there is no H bonding between  $\text{CO}_2\text{H}$  groups is decarboxylated faster than II or IIIa. CPJR

REEL/FRAME  
**19841586**

106

I/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--TEMPERATURE FUNCTION OF FE PRIME3 POSITIVE EPR LINEWIDTH IN  
ALUMINUM OXIDE -U-  
AUTHOR--(03)-DEYGEN, M.F., GEYFMAN, I.N., GLINCHUK, M.D.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1468-74  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--THERMAL EFFECT, ELECTRON PARAMAGNETIC RESONANCE, ALUMINUM  
OXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/0170 STEP NO--UR/0181/70/012/005/1468/1474  
CIRC ACCESSION NO--AP0129426  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129426

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. AND THEORETICAL INVESTIGATIONS WERE CARRIED OUT OF THE TEMP. DEPENDENCE OF THE WIDTH OF EPR LINES OF FE PRIME3 POSITIVE IN AL SUB2 O SUB3. MEASUREMENTS WERE MADE AT 3 CM BETWEEN 4.2 AND 1100DEGREEK. AT HIGH TEMPS., CONSIDERABLE CONTRIBUTION TO THE EPR LINEWIDTH IS MADE BY 4 PHONON PROCESSES WITH PARTICIPATION OF OPTICAL PHONONS. FACILITY: INST. POLYPROV., KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 51:330.115

IVANOV, N. I., GEITMAN, R. S., GAPT, L. Sh.

"Mathematical Economics Models of Optimum Production Planning"

Ekonomiko-matematicheskiye modeli optimal'nogo planirovaniya proizvodstva  
(cf. English above), Kiev, "Nauk. dumka", 1971, 206 pp, ill. 1 r. 55 k.  
(from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V873 K)

[No abstract]

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1/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--INFLUENCE OF LIGHT, DARKNESS AND NITROGEN NUTRITION ON KETO AND  
AMINOACIDS CONTENTS IN KIDNEY BEAN SPROUTS -U-  
AUTHOR-(04)-KRETOVICH, V.L., GEYKO, N.S., TSENOVA, M.P., VERKHOTURDOVA,  
G.S.  
COUNTRY OF INFO--USSR  
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2,  
PP 302-305  
DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT PHYSIOLOGY, LEGUME CROP, AMINO ACID, NITROGEN, NUTRITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1996/0475

STEP NO--UR/0216/70/000/002/0302/0305

CIRC ACCESSION NO--AP0117711

UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0117711

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS FOUND THAT ILLUMINATION OF YOUNG KIDNEY BEAN PLANTS ENHANCES ACCUMULATION OF AMINOACIDS AND KETOACIDS IN THE LEAVES. THE KETO AND AMINOACIDS CONTENTS IN THE LEAVES IS HIGHER THAN IN THE STEMS AND ROOTS. ILLUMINATION OF THE PLANTS CONSIDERABLY INCREASES INCORPORATION OF C PRIME14 FROM C PRIME14 O SUB2 INTO THE KETOACIDS. NITROGEN STARVATION OF PLANTS ENHANCES THE ACCUMULATION OF KETOACIDS IN THE LEAVES. UTILIZATION OF KETOACIDS FOR AMINOACID SYNTHESIS IN THE LEAVES IS MORE ACTIVE ON AMMONIA NITROGEN THAN ON NITRATE NITROGEN. THUS ON AMMONIA NITROGEN THE KETOACID CONTENTS IN THE LEAVES IS LOWER THAN ON OTHER SOURCES OF NITROGEN.

FACILITY: A. N. BACH INSTITUTE OF BIOCHEMISTRY ACADEMY OF SCIENCES USSR.  
FACILITY: TECHNOLOGICAL INSTITUTE OF FOOD INDUSTRY, MOSCOW.

UNCLASSIFIED

Acc. Nr: A70043964

GEYKO V.S.  
Ref. Code: UR0000

PRIMARY SOURCE: Geofizicheskiy Sbornik, Kiev, 1970, Nr 33,  
pp 15-31

DETERMINATION OF VELOCITY FEATURES OF GRADIENT MEDIA  
AND RECONSTRUCTION OF KINEMATIC STRUCTURE OF THE REFRACTED  
WAVE FIELD ACCORDING TO THE TIME-DISTANCE CURVE

V. S. Geyko

(Institute of Geophysics, Academy of Sciences, Ukrainian SSR)

Summary

The universal formulas are derived which make it possible to calculate the time field of the refracted wave and velocity features of medium directly from the time-distance curve.

Mathematical operations, described by the derived relations, can be applied to every time-distance curve of the refracted wave under the only condition of correspondence to the gradient semispace. Universal character of the formulas makes it possible to carry out the calculation according to a standard program on the high-speed electronic digital computers (EDC).

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REEL/FRAME  
19770392

21 4-24

1/2 011  
TITLE--ON SIMULTANEOUS SMOOTHING OF REFRACTED WAVE TRAVEL TIME CURVES -U-  
AUTHOR--GEYKO, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--DOPOVIDI AKADEMIY NAUK UKRAYNS'KOY RSR, SERIYA 8, GEOLOGIYA,  
GEOFIZIKA, KHIMIYA TA BIOLOGIYA, 1970, NR 1, PP 52-56  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--TRAVELTIME CURVE, SEISMIC REFRACTION, SEISMIC WAVE, LEAST  
SQUARE METHOD  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0739  
CIRC ACCESSION NO--AT0121398  
STEP NO--UR/0442/70/000/001/0052/0056  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0121398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TECHNIQUE IS SUGGESTED FOR CARRYING OUT SIMULTANEOUS SMOOTHING OF A SERIES OF EXPERIMENTAL REFRACTED WAVE TRAVEL TIME CURVES BY THE LEAST SQUARES METHOD. THE MENTIONED TECHNIQUE MAKES IT POSSIBLE, BESIDES CONSIDERING THE REGULARITIES CHARACTERISTICS OF THE WHOLE TRAVEL TIME CURVE SYSTEM IN GENERAL, TO RETAIN INDIVIDUAL FEATURES OF EACH TRAVEL TIME CURVE. THUS THE TECHNIQUE SUGGESTED OFFERS A MEANS OF OBTAINING INFORMATION ON BOTH VERTICAL AND HORIZONTAL VELOCITY GRADIENTS IN THE MEDIUM IN WHICH THE REFRACTED WAVE IS GENERATED.

FACILITY: INSTITUT GEOPHIZIKI AN

URSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ELECTROLYTE EXCRETORY FUNCTION OF THE KIDNEYS IN DIABETES MELLITUS  
-U-  
AUTHOR--GEYMAN, YE.V. G  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 77-81  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ELECTROLYTE, KIDNEY FUNCTION, EXCRETION, DIABETES MELLITUS  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1899 STEP NO--UR/0504/70/042/006/0077/0081  
CIRC ACCESSION NO--AP0129250  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR EXAMINED 116 PATIENTS WITH DIABETES MELLITUS. IN ITS DECOMPENSATION THERE WAS A DROP IN MEAN VALUE OF GLOMERULAR FILTRATION AND FILTRATION LOADS OF SODIUM, CHLORIDE AND POTASSIUM IN PARALLEL TO THE SEVERITY OF THE DISEASE. THERE WAS A RAPID DROP IN THE LEVEL OF PLASMA POTASSIUM WHEN BRINGING THE PATIENTS FROM THE CONDITION OF MARKED ACIDOSIS. THE MEAN VALUE OF SODIUM AND CHLORIDE EXCRETION, AS WELL AS THEIR CLEARANCE APPEARED TO BE THE LOWER THE LIGHTER THE FORM OF DIABETES. THE SODIUM-POTASSIUM RATIO OF THE URINE IN THE LIGHT FORM OF DIABETES IN PATIENTS WITH PRECOMATOUS AND COMATOUS CONDITION CORRESPONDED TO THAT WITH THE INCREASED FUNCTION OF THE ADRENALS. WITH COMPENSATION THE ELECTROLYTE EXCRETORY FUNCTION OF THE KIDNEYS SHOWED A TENDENCY TO NORMALIZATION. THE AUTHOR ASSUMES THAT THE RETENTION OF SODIUM, CHLORIDE AND POTASSIUM IN DIABETES MELLITUS IN THE ORGANISM IS PROBABLY REALIZED NOT ONLY BY CHANGING REABSORPTION, BUT ALSO DUE TO THE REDUCTION OF THEIR FILTRATION. FACILITY:  
KAFEDRA PROPEDEVITIKI VNUTRENNIKH BOLEZNEY, VITEBSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 576.809.55

GEYNARU, A. L., and TALLMEYSTER, E. T., Chair of Microbiology, Tartu State University

"Shigella and Escherichia Coli Sensitivity to Colicins Depending on Episomic Resistance Factors, Colicinogenic Factors, and S-R Types of Dissociation"

Moscow, Genetika, Vol 7, No 5, 1971, pp 113-122

Abstract: Under the action of resistance-promoting factors transmitted from Shigella and Escherichia coli, recombining clones of various enterobacteria change their sensitivity spectrum to colicins. R-factors obtained from R+Col+ donor strains mainly induce resistance to colicins Ia and Ib, regardless of whether or not Col-factors are transmitted during conjugation. Episomic resistance factors obtained from R+Col- donor bacteria usually make the recombining clones sensitive either to colicins B, D, and K, or to colicins B, D, K, Ia, and Ib, depending on the colicin type of the recipient bacteria. R-forms, unlike S- and SR-forms, are sensitive to colicins B, D, K, and Ia, irrespective of the presence or absence of colicinogenic or episomic resistance factors in the cell. However, the S-r mutation does not affect the phenotype manifestation of colicinogenic factors. The above-mentioned changes in  
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HEYNARU, A. L., and TALLMEYSTER, E. T., Genetika, Vol 7, No 5, 1971, pp 113-122

sensitivity spectrum are probably conditioned by changes induced in the superficial structures of the bacterial cells.

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USSR

UDC 577.472;542.98;667.61

DOLGOPOL'SKAYA, M. A., GUREVICH, Ye. S., GEYNE, Ye. I., SHCHERBAKOVA, L. I.

"Concerning the Procedure of Accelerated Tests on Antifouling Paints"

Kiev, Biologiya Morya -- Sbornik (Biology of the Sea--Collection of Works),  
No 18, The Biology of Fouling, 1970, pp 52-60

Abstract: During the development of new antifouling coatings, it is of great significance to establish the biological activities of the employed poisons as well as the rate and duration of their leaching out into sea water. The biological method of determining the effectiveness of paint, in distinction from the glycine method, permits the evaluation of any kind of paint, including those not containing copper compounds. Use of the hay bacillus or marine bacteria as an object of biological control may serve as a method of the comparative evaluation of effectiveness only for paints with a different film-forming base, but with identical composition of the poisons. As a test object for testing paint activity, the authors propose the use of daphnia,

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DOLGOPOL'SKAYA, M. A., et al., Biologiya Morya -- Sbornik, No 18, 1970,  
pp 52-60

cultured and adapted to water of 6‰ salinity. This method gives convincing results and may be used for evaluating the biological activity of paints the year round in a region far from the sea. 2 tables. 6 bibliographic entries.

2/2

KROSHKIN, V. A., TSAREVSKIY, V. V., KABANOV, N. M., MAKSHANOV, V. S., FEDOSEYEV, B. A., GEYNISH, Z. V., GORKUNENKO, G. N., and GUBANOV, A. S., All-Union Scientific Research, Planning Technological Institute of Chemical Petroleum Equipment

"Electro-Slag Welding With Concomitant Normalization by the Induction Method"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 73, pp 48-51

Abstract: The authors study methods for increasing the resistance to brittle fracture of joints made from low-alloy grades of steel and which were electro-slag welded. The results show that the coincidence of the heat cycles ensures the required impact strength for all joint zones up to 80 mm thick down to  $-70^{\circ}\text{C}$  during the pilot introduction of the new technology for the electro-slag welding of the O9G2S grade steel. The developed industrial frequency, induction unit makes it possible to coincide the heat cycles of electro-slag welding with the concomitant normalization of the longitudinal and annular seams on large and small equipment made from cold-resistant and heat-resistant, low-alloy grades of steel. Further study is required to select the optimal heat cycles for electro-slag welding and normalization of joints as a function of thickness and steel grade.

USSR

UDC 621.791

GEYNISH, Z. V., KALININ, B. P., DENISOV, A. V., BUCHINSKIY, V. N., Engineers,  
and POTAP'YEVSKIY, A. G., Candidate of Technical Sciences

"The Use of Expendable-Electrode Argon Pulsed-Arc Welding for the Fabrication  
of Chemical Equipment"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 10, Oct 72, p 24

Abstract: VNIPTkhimnefteapparatury [All-Union Scientific Research, Planning  
and Technological Institute of Chemical and Petroleum Equipment] has developed  
a technique for the consumable-electrode argon pulsed-arc welding of stainless-  
steel angle, T and lap joints for the fabrication of parts and components for  
column-type apparatuses (trays, spouts, boxes etc.). The use of pulsed-arc  
welding makes it possible to raise labor productivity, improve product quality  
and appearance, and reduce product deformation. Pulsed-arc welding with  
06Kh19N9T and 07Kh25N13 wires assures high mechanical weld-joint properties.  
Such joints are not susceptible to cracking or intercrystalline corrosion.  
The weld seams have the usual austenitic-ferritic structure. The technique  
makes it possible to weld not only austenitic steels, but also semiferritic  
steels, for example 0Kh13. The developed welding technique has been introduced  
1/2

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USSR

GEYNISH, Z. V., et al., Khimicheskoye i Neftyanoye Mashinostroyeniye, No 10, Oct 72, p 24

at the Chernovitskiy Machine-Building Plant for the fabrication of stainless-steel parts and components for column-type apparatuses, resulting in an annual economic effect of about 17,000 rubles.

2/2

Acc. Nr:

A70048313

Abstracting Service:

CHEMICAL ABST. 5/79

Ref. Code:

UR 0020

95994a Effect of the supporting electrolyte on the formation of finely divided precipitates during the reduction of metals at a mercury electrode. Gelnrikhs, K. Ya.; Babkin, G. N.; Kozlovskii, M. T.; Gladyshev, V. P. (Inst. Khim. Nauk, Alma-Ata, USSR). Dokl. Akad. Nauk SSSR 1970, 190(1), 135-7 [Phys Chem] (Russ). The effect of the supporting electrolyte on the electrode position of finely divided Cd onto a still Hg electrode was studied by measuring polarization ( $\eta$ ) in  $\text{ClO}_4^-$  solns. of different concn. contg.  $0.5N \text{ Cd}^{2+}$ . At pH 6.5, the  $\eta$  values were independent of the nature of the anions ( $\text{SO}_4^{2-}$ ,  $\text{Cl}^-$ , or  $\text{ClO}_4^-$ ). In each case, at the limiting c.d., the finely divided Cd was formed; vibrating the electrode caused rapid dissoln. of the Cd into the Hg. Increasing the  $\text{NaClO}_4$  concn. increased the  $\eta$  and decreased the limiting c.d. At concn.  $> 0.5M \text{ NaClO}_4$ , the voltage oscillated and Na amalgam was formed during these oscillations. At higher c.d.s., Cd was chem. pptd. by the amalgam to form the powd. Cd. The ability to form powd. Cd decreased from  $\text{Li}^+ > \text{Na}^+ > \text{K}^+ > \text{Cs}^+$ . The limiting c.d. for Cd redn. was not a function of pH. The reason for the finely divided deposits was not the passivating action of  $\text{OH}^-$ .

S. G. Meibuhr

REEL/FRAME  
19800015

F B

18

USSR

UDC 621.357.1:669.3-492.2

GEYNRIKHO, K. YA., AYDAROV, R. ZH., SAPRYGIN, A. F., and YAROSLAVTSEV, A. S.

"Preparation of Copper Powders at High Velocities of Electrolyte Circulation"

Tr. In-ta organ. kataliza i elektrokhimii. AN Kaz SSR (Proceedings of the Institute of Organic Catalysts and Electrochemistry. Academy of Sciences Kazakstan SSR), No 33, 1972, pp 37-42 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L332)

Translation: It was determined that to prepare a copper powder in a circulating electrolyzer the optimum conditions are as follows: the velocity of the electrolyte flow must not be less than 2 m/sec, temperature of the solution 30-40°C, concentration of Cu in solution 1-8 g/L. Under these conditions, the  $D_k$  may attain  $2-3 \times 10^4$  a/m<sup>2</sup>.

1/1

USSR

UDC 620.197.6:621.791.763-1

PORTNOY, N. D., and GEYNRIKHS DORF, N. G., Candidates of Technical Sciences, GAFAROV, N. T., NOVIKOVA, Ye. Z. (Ural Railroad Car Plant), TARASOVA, A. A., and KARPECHENKOVA, G. M. (Ural Scientific Research Institute of Ferrous Metallurgy), Engineers

"Characteristics of Certain Protective Coatings Used in Point Resistance Welding"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 43-45

Abstract: A study was made of the effect of impact strength, film elasticity, covering power, and electrical conductivity of corrosion-resistant coatings based on various lacquers on joint quality during welding of type-09G2 steel. Fifteen percent aluminum powder was added to two of the lacquers in order to increase electrical conductivity. With coatings based on lacquers 170 and LSP-1 welding can be done for six days after application. The quality of welded joints covered with composition 119 is decreased if welding is performed more than two days after application of the coating. Oil-base paints are compatible with coatings based on composition 119 and 170 lacquer, but do not dry in the established time when painted over LSP-1 lacquer. Coatings based on 170 lacquer have the

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USSR

PORTNOY, N. D., et al, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 43-45

greatest impact strength. The impact strength of coatings based on LSP-1 lacquer decreases as the temperature increases to 70°C. Such properties of coatings as elasticity, covering power, hardness, heat resistance, and drying time fall within the established norms set by the standards. When parts are painted with LSP-1 varnish and composition 119, the content of xylene in the working area somewhat exceeds the safety norm. When 170 varnish is used, the content of harmful substances falls within the safety norms. The best technological and mechanical properties are provided by corrosion-resistant, low-toxicity coatings based on 170 varnish.

2/2

- 70 -

USSR

UDC 681.325.3:612.377.622.13

GEYSHIS, M. I., YEVEYEV, F. Ye., IZRAILEV, Yu. S., KUSHLIN, V. I., and  
PLOTKIN, M. A.

"On Achieving a High-Precision, High-Speed Matrix System"

Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 47-50 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B376, by B. K.)

Translation: A decoding matrix system for use in digital-analog converters which function in communication systems with pulse-code modulation is described. The decoding matrix consists of a nine-bit ohmic divider of the R-2R type and sources of current, which are controlled by symmetric diode keys. The sources of current are formed by switching on the sources in series with a source of standard voltage of resistors with a resistance of 20 kilohms. An expression for evaluating the admissible root-mean-square deviation of the resistances of the matrix is derived. The basic technical data is presented for the matrix system, which is made in the form of a functionally completed assembly based on thin-film technology. It is pointed out that the time needed for establishment of a transient process in the

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USSR

GEYSHIS, M. I., et al., Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 47-50 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B376, by B. K.)

system does not exceed  $5 \cdot 10^{-9}$  seconds, given a root-mean-square voltage error of  $(0.088-0.16) \delta$ , where  $\delta$  is the quantization size. 1 illustration.

2/2

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USSR

UDC 621.373.521.1:621.382.233

L'VOVICH, A. A., GEYSMAN, YU. V.

Vysokostabilnyye kvartsevyye generatory na tunnelnykh diodakh (High-Stability Quartz Oscillators Made of Tunnel Diodes), Moscow, Svyaz' Press, 1970, 166 pp (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D260K)

Translation: This book is devoted to the theory and calculation of highly stable quartz oscillators executed from tunnel diodes. The principles of constructing the generator circuits with active elements of the two-terminal circuit type with negative resistances are investigated. Various versions of the schematics of the tunnel diode quartz oscillators are compared. Procedures for effective attenuation of the frequency instability are investigated, and information is presented on the equivalent electrical parameters and other indexes determining the stabilizing properties of modern precision quartz resonators. The basic area of realization of devices for stabilizing the temperature in precision thermostats of quartz oscillators are investigated. The book is designed for engineering-technical and scientific workers, specialists in the fields of electrocommunications, radio electronics, instrument making, metrology, a number of other specialties, and for graduate and advanced students in higher institutions of learning. There are 62 illustrations, 16 tables and a 72-entry bibliography.

1/1

BIOLOGY  
Agriculture

UDC 595.786:577.95

USSR

~~GEYSPTS, K. F.~~ PENYAZ', M. I., and SHASHENKOVA, D. Kh., Biological Institute,  
Leningrad State University

"Photoperiod and Temperature as Factors in the Development of the Moth  
*Agrostis segetum* (Lepidoptera, Noctuidae)"

Leningrad, Zoologicheskii Zhurnal, No 11, 1971, pp 1,674-1,685

Abstract: Experiments designed to elucidate the role of light and temperature in the development of two geographic populations of the turnip moth *Agrostis segetum* (from the North Caucasus and South Tadzhikistan) revealed the existence of two types of diapause, pronymphal and larval. Both types of dormancy are facultative in that they occur only when there are certain combinations of environmental factors. The pronymphal diapause is most pronounced when moderate temperatures are combined with short photoperiods, i.e., the factors characteristic of natural conditions preceding preparation for the winter. The larval diapause occurs when high temperatures are combined with long photoperiods. At this time the larvae feed less intensively and grow much more slowly, although they remain active. Feeding helps the larvae to maintain the water balance and thus adapt to summer heat and drought. The experimental findings are applied to the observations of other investigators on the behavior of *Agrostis segetum* under natural conditions.

1/1

USSR

UDC 615.21:547.665

AREN, A. K., BERZINYA, I. A., GEYTA, L. S., and GERMANE, S. K., Institute of Organic Synthesis Ac. Sc. Latvian SSR

"2-[ $\gamma$ -(N-Arylpiperazino)propyl]-2-arylindandiones-1,3 and -indandiol-1,3"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 6-10

Abstract: In continuation of the search for neuro- and psychotropic agents, a series of title compounds was synthesized. To 2.3 g sodium dissolved in 200 ml of n-propanol, 22.5 g 2-phenylindandione-1,3, 24 g 1,3-dibromopropane, and 14.9 g NaI are added and refluxed for 8-10 hrs. The solution is then cooled, poured into water, the separated oil phase is dissolved in benzene, washed with sodium bicarbonate solution and dried over magnesium sulfate. Benzene is evaporated and the 2-( $\gamma$ -bromopropyl)-2-phenylindandione-1,3, m.p. 88° is isolated by chromatography on an alumina column. Analogously 2-( $\gamma$ -chloropropyl)-2-(p-methoxyphenyl)-indandione-1,3, b.p. 160-70°/10<sup>-2</sup> mm Hg, and 2-( $\gamma$ -hydroxypropyl)-2-phenylindandione-1,3, m.p. 78° were prepared. To convert these intermediates to 2-[ $\gamma$ -(N-arylpiperazino)-propyl]-2-arylindandiones-1,3, above compounds were dissolved in benzene and respective N-arylpiperazines in benzene were added, the mixture being refluxed for 1/2

USSR

AREN, A. K., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 6-10

0.5-1 hr, cooled, and filtered. The precipitated hydrochloride is saturated with HCl, the product filtered, suspended in water, aqueous ammonia is added and the only product crystallized in alcohol. Pharmacological studies showed all compounds to exhibit tranquilizing activity, the most active being the m-substituted arylpiperazine derivatives. All of the indandio-1,3 derivatives exhibited toxicity which increased with the increased number of methyl groups between the diketo group and N-aryl piperazine.

2/2

- 38 -

USSR

UDC: 547.655;547.541;543.422

GEYTA, L. S., DALBERGA, I. E., MEDNE, K. K., ARENS, A. K., Institute of Organic Synthesis, Academy of Sciences Latvian SSR, Order of the Red Banner of Labor

"Study of Unsaturated Acylindandiones. Part 6. Sulfoderivatives of 2-Cyannamoylindiones-1,3"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya Khimicheskaya, no 5, 70, pp 571-575

Abstract: Sulfuration of 2-cyannamoylindandiones-1,3 (CI) has shown that the 2-sulfoacid CI which is formed by treating CI with dioxanosulfotrioxide is unstable; however, when sulfurated in a benzene ring, by treatment with chlorosulfonic acid, CI becomes a stable compound. Sulfochlorides and sulfonamides have been synthesized and their infrared spectra studied. The tuberculostatic activity of CI tested on strains of microorganisms H37Rv, Ravenel, Vallee u b has shown their low activity. The minimal inhibiting concentration of the growth of tubercular cultures by CI sulfoderivatives fluctuates between 1.7 mcg/ml and > 50.00 mcg/ml, while tubazid inhibits microbacterial growth in concentrations of 0.10 to 22.46 mcg/ml. Tables 1/2



USSR

GEYTA, L. S., et al, Izvestiya Akademii Nauk Latviyskoy SSR, Seriya  
Khimicheskaya, no 5, 70, pp 571-575

in the original article provide data on infrared spectra and tuberculostatic  
activities of various Cl sulfoderivatives, their formulas, melting points,  
composition (%), and yields (%).

2/2

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1/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--UNSATURATED ACYLINDANDIONES. V. CONDENSATION OF 2,ACETYL,  
1,3,INDANDIONES WITH NITROBENZALDEHYDES -U-  
AUTHOR--GEYTA, L., GRINVALDE, A., ARENS, A. G  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 99-102  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CONDENSATION REACTION, BENZENE DERIVATIVE, AROMATIC KETONE,  
AROMATIC NITRO COMPOUND, PIPERIDINE, BENZALDEHYDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1987/1062 STEP NO--UR/0464/70/000/001/0099/0102  
CIRC ACCESSION NO--AP0104460  
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70  
CIRC ACCESSION NO--AP0104460  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS  
GRAPHIC INFORMATION. 2,ACETYL,1,3,INDANDIONE WAS CONDENSED WITH O-,  
M-, AND P-NITROBENZALDEHYDE IN PIPERIDINE TO GIVE O, M-, AND  
P-NITROCINNAMOYLPERINAPHTHO,1,3,INDANDIONE (I), M. 200-2DEGREES,  
211-12DEGREES, AND 276DEGREES (ACOH), RESP. BESIDES I, 18.3PERCENT II  
M. 193-4DEGREES (ACOH) WAS ISOLATED.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--SYNTHESIS OF 2,CINNAMOYLPERINAPHTHO,1,3,INDANDIONES -U-

AUTHOR--GEYTA, L., VANAGS, G.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 96-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, AROMATIC KETONE, BROMINATED ORGANIC  
COMPOUND, AROMATIC ALDEHYDE, CONDENSATION REACTION, BENZENE DERIVATIVE,  
ETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/1063

STEP NO--UR/0464/70/000/001/0096/0098

CIRC ACCESSION NO--AP0104461

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE TITLE COMPS. (I) WERE PREPD. BY CONDENSING 2, ACETYLPERINAPHTHO, 1,3, INDANDIONE (II) WITH AROMATIC ALDEHYDES. THUS, A MIXT. OF II, ALDEHYDE, AND ET SUB2 NH WAS REFLUXED 15-45 MIN, DILD. WITH ETOH, AND REFLUXED 20-30 MIN TO GIVE I. (R PRIME1, & PRIME2, M.P., AND PERCENT YIELD GIVEN): H, H, 198-200DEGREES, 77; H, OME, 237-8DEGREES, 60; OME, OME, 200-2DEGREES, 62; OCH SUB2 O, 232-4DEGREES, 40. REFLUXING A MIXT. OF II WITH N-BROMOSUCCINIMIDE (NBS) IN CHCL SUB3 OR I WITH NBS-C SUB6 H SUB6 GAVE III (R AND M.P. GIVEN): ME, 145-6DEGREES; CH:CHPH, 120-2DEGREES; 3,4, METHYLENEDIOXYCINNAMOYL, 143-5DEGREES.

UNCLASSIFIED

Acc. Nr: *AP0051978*

Ref. Code: *020219*

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i  
Meditsiny, 1970, Vol *69*, Nr *2*, pp *126-123*

USE OF METHODS OF CROSSED PREPARATIVE ELECTROPHORESIS AND GEL  
FILTRATION FOR INVESTIGATING INTERACTION OF TETRACYCLINES WITH  
BLOOD SERUM PROTEINS

G. Ya. Kieman, I. Ya. Geyman

Scientific Research Group of Chemotherapy, Academy of Medical Sciences of the USSR;  
and N. I. Semashko Hospital № 1, Moscow Rail Road, Moscow

Methods of crossed preparative electrophoresis and gel filtration were used to investigate interaction of tetracyclines with blood serum proteins in the human. It is established that chlorotetracycline, oxytetracycline and tetracycline interact with albumin of the prepared human blood serum. Only oxytetracycline and tetracycline interact with  $\gamma$ -globulin. Experiments on gel filtration allow it to suggest that complexes of chlorotetracycline with blood serum and albumin can be of somewhat different character and more stable in comparison with two other tetracyclines.

REEL/FRA  
19820465

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1/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--COMPARISON OF GELFILTRATION METHOD WITH THE METHODS WIDELY USED IN  
STUDIES ON PENICILLIN BINDING BY SERUM ALBUMINS -U-

AUTHOR-(02)-GEYTMAN, I.YA., KIVMAN, G.YA.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 431-434

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, FILTRATION, BLOOD SERUM, ALBUMIN,  
ANTIBIOTIC/(U)OXACILLIN ANTIBIOTIC, (U)METHICILLIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0138

STEP NO--UR/0297/70/015/005/0431/0434

CIRC ACCESSION NO--AP0114534

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARATIVE STUDIES ON BINDING OF BENZYL PENICILLIN, OXACILLIN AND METHICILLIN WITH THE USE OF SUCH METHODS AS GEL FILTRATION, EQUILIBRIUM DIALYSIS AND DETERMINATION OF ANTIBIOTIC ACTIVITY IN ALBUMIN AND FREE OF ALBUMIN SOLUTIONS AT THEIR DIFFUSION TO AGAR WERE CARRIED OUT. COMPARISON OF THE DATA ON BINDING, OBTAINED WITH THE ABOVE METHODS SHOWED THE COMPLEX ALBUMIN ANTIBIOTIC TO BE STABLE. OXACILLIN BINDING WITH SERUM ALBUMIN WAS MOST STABLE, THEN FOLLOW BENZYL PENICILLIN AND METHICILLIN. DIFFERENCES IN THE DATA ON PENICILLIN BINDING BY BLOOD SERUM AND ALBUMIN OBTAINED WITH DETERMINATION OF THE ANTIBIOTIC ACTIVITY IN ALBUMIN AND FREE OF ALBUMIN SOLUTIONS AT THEIR DIFFUSION TO AGAR MAY BE ATTRIBUTED TO DEPENDENCE OF THE ANTIBIOTIC DIFFUSION CAPACITY ON THE SOLVENT USED AND TO SOME EXTENT OF VARIOUS STABILITY LEVELS OF PENICILLIN COMPLEXES WITH SERUM ALBUMINS AND ALBUMINS ALONE. FACILITY: N. A. SEMASHKO HOSPITAL NO. 1, MOSCOW.

UNCLASSIFIED



USSR

UDC 537.311.3:546.26'28

GEYTSI, I.I., GORIN, S.I., NESTEROV, A.A., PLETYUSHKIN, A.A.

"On The Nature Of The 'Red' Band Of Cathodoluminescence Of Irradiated  $\beta$ -SiC"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 97-105 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B53)

Translation: The effect was studied of fast electrons on the spectra of cathodoluminescence (CL) of  $\beta$ -SiC. Crystals of  $\beta$ -SiC (n-type;  $\rho \sim 0.1 - 1.0 \text{ ohm.cm}$ ) were irradiated by 3.5 Mev fast electrons, with doses from  $10^{12}$  to  $10^{17} \text{ cm}^{-2}$  at room temperature. After irradiation by doses of  $\sim 10^{15} - 10^{16} \text{ cm}^{-2}$ , in the red region of the spectrum (2 - 1.5 ev), an intensive band of CL appears with good development of the thin structure, which is connected with recombinations of the localized excitons at the ionized acceptors. I.I.

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USSR

UDC: 621.315.592

GEYTSI, I.I., NESTEROV, A.A., SMIRNOV, L.S.

"Thin Structure of the 'Red' Band of Cathodoluminescence of  $\beta$ -SiC Irradiated by Fast Electrons"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 879-885

**Abstract:** This article contains an investigation of the cathodoluminescence of  $\beta$ -SiC caused by lattice defects. Irradiation by fast electrons and also heating to high-temperatures (above 1,100° C) lead to the occurrence of luminescence in the 6,250-10,000 Å range. At temperatures below 150° K on the short-wave side of this band, there is a thin structure in the form of narrow lines with a halfwidth less than  $kT$  and their phonon recurrence. It is demonstrated that the "red" band with its fine structure is most likely caused by radiation annihilation of excitons captured on the ionized centers formed as a result of irradiation or high-temperature heating. It is proposed that the centers are of the acceptor type. The depths of these levels are estimated from the fine cathodoluminescence structure:  $E_v + 0.42$ ,  $E_v + 0.44$ ,  $E_v + 0.48$ ,  $E_v + 0.5$  electron volts. The final solution of the problem of the charge state of the centers requires additional investigation.

1/3

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USSR

GEYTSI, I.I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 879-885

In order to explain the mechanism of radiative recombination in the red band and also the relation between the fine structure and the continuous spectrum, the intensities were measured as functions of the excitation flux density, the radiation kinetics during pulse excitation were studied, and spectra were taken for defined time intervals after the end of the excitation pulse. The results indicate that the fine structure is not connected with the donor-acceptor mechanism of radiative recombination.

It is pointed out that the green band of the cathodoluminescence is connected with radiative hole capture in the nitrogen level. Radiation by fast electrons leads to the occurrence of additional recombination channels of the nonequilibrium carriers of both radiated and nonradiated types. The presence of narrow lines (with a halfwidth less than  $kT$ ) within the limits of the red band indicate localization of the charge carriers before recombination. The difference in the form of the red band for different temperatures is determined by whether

2/3

USSR

GEYTSE, I.I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 879-885

phononless transitions take place or not. It is also pointed out that the model of the exciton located on the ionized center is more suitable to t explain the data obtained in this experiment than the model of the exciton located on the neutral center.

3/3

- 40 -

USSR

GEYVANDOV, E.A., BALANDIN, E.V.

"Automatic Indexing and Internal Organization of Chemical Structure Files in a Computer"

Moscow, Nauchno-Tekhnicheskaya Informatsiya - Seriya 2: Informatsionnyye Protsessy i Sistemy; May 1971; pp 18-23

Abstract: A new approach to the organization of the files of organic structures inside a computer is proposed that will avoid total scanning of the structures during their automatic searching (or the scanning of their filter notations).

The algorithm described in the paper: (1) assigns to each structure a set  $a_n^m$  of classificatory parameters (descriptors) which indicate the cyclic ramification of the structure, size of rings, composition of the cyclic system and the substitutes, and number of rings in the cyclic system; descriptors are calculation by a linear notation; (2) computes for each structure the class index

$N = \sum_{i=1}^n d_i \beta_i$ , where  $d_i$  are constants,  $\beta_i = (a_n^m)_i$ : in other words, the algorithm breaks down the file  $S$  of structures into  $N$  non-intersecting classes; (3) forms for every class of request  $x_{rp}$  ( $r$  is the subscript indicating the homology

1/2

GEIVANDOV. E.A.. BALANDIN. E.V.. Moscow, Nauchno-Tekhnicheskaya Informatsiya - Seriya 2: Informatsionnyye Protsessy i Sistemy; May 1971, pp 18-23

function;  $p$  - the class of the fragment requested) a class of related structures  $s_p = s_a U s_b \dots U s_i$ ;  $s_a, s_b, s_i \in S$ . This obviates the need for storing in the computer memory any additional structural data e.g., filters of structures, cross-references, records of hierarchies of structure classes, etc.

The algorithm has been implemented on the BESM-4 computer. It takes an average of 0.022 sec. to compute the class index by the algorithm performing operations specified under items 1 and 2 above.

The formation of the classes of related structures takes an average of 0.15 sec. for one request. The computer experiment has been carried out on a file of 433 structures and 20 search requests.

USSR

GEYZEN, R. Ye.

UDC: 629.78.015.4

"Application of One Mixed Method to Problems of the Influence of Boundary Conditions on Free and Parametric Oscillations of a Cylindrical Shell"

Gidroaeromekh. i Teoriya Uprugosti. Mezhvuz. Nauch. Sb. [Hydroaeromechanics and the Theory of Elasticity. Inter-University Scientific Collection], 1973, No 16, pp 103-110 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 9, 1973, Abstract No 9.41.147)

Translation: A mixed method is presented for solution of problems on the oscillation of shells, based on combined application of Bubnov-Galerkin method for reduction of the order of differential operators of the initial solution equation with subsequent precise (in the case of free oscillations) or approximate (in the case of parametric oscillations) solution of the simplified equations. The low tones of the oscillations are studied. During analysis of these tones, the solution equation may satisfy tangential and radial boundary conditions separately. Elastic-compliance asymmetrical boundary conditions are used. The calculations show the practical applicability of the method, greatly simplifying solution on the basis of equations from the moment theory of shells. 7 Biblio. Refs. Resume

USSR

UDC: None

GEZALOV, M. A., KUKSENKO, V. S., and SLUTSKER, A. I.

"Kinetics of the Formation of Submicroscopic Cracks in Polymers Under Load"

Leningrad, Fizika Tverdogo Tela, vol 14, No 2, 1972, pp 413-416

Abstract: A description is given of experiments performed by the authors to determine how the formation of submicroscopic cracks in polymers under various stresses and temperatures varies. In these experiments, the specimen was kept at constant temperature and was placed in a small-angled x-ray diffractometer. It was subjected to a load increasing uniformly with time, and the intensity of the diffusion dispersion was measured. To exclude factors complicating the kinetics of the crack formation, the measurements were made at the initial portions of the curves for the accumulation of the cracks, at which the complications are minimal. Curves are given for the accumulation of cracks in capron as a function of the stress and the temperature. From these curves, the authors find a connection between the processes of crack formation and the destruction or life expectancy of the specimen. They express their gratitude to S. N. Zhurkov for his comments and are associated with the A. F. Ioffe Physicotechnical Institute.

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USSR

GEZALOV, M. A.; KUKSENIKO, V. S.; SLUTSKER, A. I. (Joffe Physics-Engineering Institute, USSR Academy of Sciences, Leningrad)

"Formation of Submicroscopic Cracks in Stressed Polymers at Various Temperatures"

Leningrad, Fizika Tverdogo Tela; February, 1971; pp 445-9

ABSTRACT: A method of small-angle X-ray diffraction was used to study the laws governing the formation of submicrocracks under stress along the orientation axis of crystalline polymers (polycapromide, polypropylene) at various temperatures (from  $+20^{\circ}$  to  $-70^{\circ}\text{C}$ ). The equipment used allowed direct stress of the samples in the vacuum chamber of a small-angle diffractometer in the temperature range of  $+100^{\circ}$  to  $-150^{\circ}\text{C}$ . The appearance of small-angle diffusion scattering served as an indicator of the occurrence of submicrocracks. The dimensions and concentration of the submicrocracks were determined by the angle of intensive diffusion scattering in different directions and the absolute magnitude of the intensity respectively.

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USSR

GEZALOV, M. A., et al, Fizika Tverdogo Tela; February, 1971; pp 445-9

The fibrillar type of supermolecular structure is characteristic of the oriented state. It appeared that the transverse dimensions of the submicrocracks (perpendicular to the axis of stress) do not vary with a change in the stress temperature and are the same in magnitude as the transverse dimension of the fibril. Thus, the process of destruction of the polymer appears to be closely connected with its supermolecular structure. The longitudinal dimensions of the submicrocracks decrease with a decrease in the stress temperature, which is connected with a decrease in the deformability of the polymer. The concentration of submicrocracks in the prestressed state decreases monotonically with a decrease in the temperature of the samples during the test. On the basis of this, the conclusion is drawn that the observation of submicrocracks in many cases is not limited by the absence of submicrocrack formation itself but is related to the fact that the concentrations and dimensions of the submicrocracks are comparatively small and can not be recorded by present techniques of X-ray measurement.

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6022

CSO: 1862-W

- 68 -

USSR

UDC 616.988.73-08-084(479.24)

IMAMALIYEVA, G. M., ABUSHEV, F. A., GEZALOVA, F. A., and KAKHRAMANOV, T. B.,  
NIIVMIG imeni G. M. Musabektov and Chair of Infectious Diseases, Azerbaydzhan  
State Medical Institute imeni N. Narimanov

"The Clinico-Epidemiological Characteristics of Ornithosis in Baku"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 50, No 3, Mar 73, pp 54-58

Abstract: Serological tests carried out on 3824 patients with various diseases in Baku during 1966-71 showed that 342 of them (8.99%) had been infected with ornithosis. Similar tests on 336 healthy persons (blood donors) indicated that 5% had been infected with ornithosis. During the period in question, 51 cases of ornithosis were diagnosed among patients treated at hospitals and clinics. Twenty six of the ornithosis patients were men and 25 women. Of the 51 patients, 21 kept pigeons or had some sort of contact with them; 3 kept in their rooms fancy birds such as parrots, canaries, and goldfinches; and 17 had chickens, geese, and ducks. In 10 cases the source of infection could not be established. Of pigeons caught in Baku, 21.4% were infected with ornithosis. Of the ornithosis patients, 62.7% were 30-50 years old, 29.4% younger than 30 years, and 7.8% older than 50 years. As distinguished from Leningrad and Moscow, where most cases of ornithosis are due to infection of persons of post-retirement age from pigeons in squares and parks, the majority of infections in Baku

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IMAMALIYEVA, G. M., et al., Azerbaydzhanskiy Meditsinskiy Zhurnal, Vol 50, No 3, Mar 73, pp 54-58

was among persons of a younger age and was apparently associated with the keeping of pigeons at home. Of the 51 patients 27 had the disease in a mild form, 18 in a moderately severe form, and 6 in an acute form. In cases in which the disease was initially mild, worsening of the health of the patients took place 2-3 months later; the patients had occasional fever, myalgia, insomnia, pain in the joints, and vegetative disturbances at the time of recurrence of the disease. Of 35 cases the histories of which are summarized, all were incorrectly diagnosed in the beginning, although sufficient information on ornithosis had been given to physicians by the medical authorities in Azerbaydhan. In one case failure to diagnose the disease correctly was responsible for inadequate treatment and the death of the patient. Twenty one of the 35 patients developed pneumonia of various types and 4 sharpening of the lung outline. Some ornithosis patients developed considerable functional and organic changes in the nervous system. Cases of this type, in which the background of infection with ornithosis had not been recognized, were found by the authors in neurological departments of some hospitals.

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USSR

UDC 577.391

GEZALYAN, L. S., Radiobiology Sector, Ministry of Health, Armenian SSR

"Role of the Sympathetic Nervous System in the Reactions of the Cerebral Cortex, Posterior Hypothalamus, and Midbrain Reticular Formation to Acute Radiation"

Yerevan, Biologicheskii Zhurnal Armenii, No 7, 1971, pp 110-111

Abstract: The bioelectrical activity of the cortex, hypothalamus, hippocampus, and reticular formation was studied in a sympathectomized rabbits before and after whole-body gamma irradiation (300 r). Postradiation depression of action potential was clearly pronounced in the sympathectomized rabbits but did not occur in the intact animals. The changes after the bilateral sympathectomy were not marked, but after irradiation the bioelectrical activity was severely depressed in all the brain regions under study and convulsive discharges sometimes occurred in the hippocampus. Slow oscillations and acute waves eventually appeared in the cortex and subcortical formations. Restoration of the normal rhythms did not take place in a number of animals.

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USSR

UDC 591

GEZALYAN, L. S., and PODACHIN, V. P., Radiobiology Sector, Ministry of Health,  
Armenian SSR, and Institute of Higher Nervous Activity and Neurophysiology, Academy  
of Sciences USSR

"Effect of Ionizing Radiation on Evoked Bioelectric Activity of the Rat Brain"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 7, 1970, pp 32-39

Abstract: Rats were subjected to whole-body irradiation (300, 550, and 700 r), and changes in evoked potential were recorded at regular intervals up to 3 weeks after irradiation by means of microelectrodes implanted in neurons of the cuneate nucleus of the medulla oblongata, specific nuclei of the thalamus, and the cerebellar cortex. No significant impairment of evoked bioelectric activity was observed after the first week. Beginning with the second week, the latent period of the responses steadily increased. As elapsed time after exposure increased, the amplitude of the evoked potential decreased more rapidly and the changes in all parameters and configurations became more pronounced. The increase in the latent period of the evoked potential and the decrease in its amplitude are regarded as direct evidence of inhibition of the nuclei.

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022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--INVESTIGATION OF THE MECHANISM OF CHANGES OF RS CHARACTER OF  
NEUROVACCINE IN PASSAGES IN THE PRESENCE OF BROMODEOXYURIDINE -U-  
AUTHOR-(03)-CHERNOS, V.I., APRIDONIDZE, K.G., GHENDON, YU.Z.  
COUNTRY OF INFO--USSR  
SOURCE--J GEN VIROL 6(3): 355-359. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BROMINATED ORGANIC COMPOUND, VIRUS, SKIN PHYSIOLOGY, NECROSIS,  
INTERFERON  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0929 STEP NO--UK/0000/70/006/003/0355/0359  
CIRC ACCESSION NO--AP0126588  
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0126588

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEUROVACCINIA VIRUS PROPAGATED IN THE PRESENCE OF BROMODEOXYURIDINE LOSES THE CAPACITY TO PRODUCE NECROSIS IN THE SKIN OF RABBITS. MECHANISMS UNDERLYING THIS LOSS WERE STUDIED. THE POPULATION UNDER STUDY CONSISTED PREDOMINANTLY OF VIRUS PARTICLES CAPABLE OF PRODUCING NECROSIS (RS PRIME POSITIVE) AND A SMALL PORTION OF PARTICLES WHICH HAD LOST THIS CAPACITY (RS PRIME NEGATIVE). AN RS PRIME NEGATIVE CLONE ISOLATED FROM THE POPULATION INDUCED AN INHIBITOR OF INTERFERON TYPE IN RABBIT SKIN, WHICH MARKEDLY INHIBITED REPRODUCTION OF RS PRIME POSITIVE VIRUS STRAINS AND CONSEQUENTLY THE CAPACITY OF THESE STRAINS TO PRODUCE NECROSIS. FACILITY: MOSCOW RES. INST. VIRAL PREP., MOSCOW, USSR.

UNCLASSIFIED



USSR

UDC 539.4

STEPNOV, M. N., GIATSINTOV, YE. V., SEREGIN, A. S. (Moscow),  
Moscow Aviation Technological Institute

"A Statistical Analysis of the Fatigue Characteristics of Light  
Alloys for a Probabilistic Estimate of the Strength of Aircraft  
Structural Elements"

Kiev, Problemy Prochnosti, No 10, 1970, pp 38-42

Abstract: An analysis is made of the fatigue characteristics  
of light alloys, obtained in the testing of laboratory speci-  
mens; consideration is given to the possibility of using the  
fatigue characteristics for estimating the strength of parts  
with account taken of the statistical similitude criterion of  
fatigue destruction. 6 figures, 4 bibliographic entries.

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USSR

UDC 621.373.029.7.001.5

GIBADULLIN, N.S., KULAKOV, B.P., NURMUHAMETOV, V.K.

"Analysis Of The Critical Characteristics Of Gas Laser Superregenerator Amplification"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1439-1444

Abstract: The paper considers a superregenerative regime of amplification of a coherent optical signal in a gas laser with modulated Q. As a continuation of a previous paper of which B.P. Kulakov is a coauthor, an analysis is made of such basic characteristics as threshold sensitivity, maximum coefficient of amplification and dynamic range of a single-frequency gas laser superregenerative amplifier (LSA). The corresponding parameters are evaluated of a helium-neon LSA. At  $\lambda = 0.63$  micron these amount to  $10^{-8}$  L<sup>-1</sup> watt,  $5 \cdot 10^{-4}$  V<sup>2</sup> and  $5 \cdot 10^{-4}$  V<sup>2</sup>, where L and V are the length and volume of the amplifier resonator taken in cm and cm<sup>3</sup>. Curves are shown of the dependence of the coefficient of amplification of the LSA at  $\lambda = 0.63$  micron on the pulse duration of Q-modulation at various levels of the input signal. 1 fig. 12 ref. Received by editors, 20 May 1971.

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USSR

UDC 576.858.25.083.2:576.353

GIBADULIN, R. A., BOGOMOLOVA, N. N., and ANDZHAPARIDZE, O. G., Moscow Scientific Research Institute of Virus Preparations

"Chronic Infection of HEp-2 Cells with Tick-Borne Encephalitis Virus. Communication 6. Study of the Mitotic Cycle Parameters of Infected Cells"

Moscow, Voprosy Virusologii, No 6, Nov/Dec 70, pp 658-662

Abstract: HEp-2 cultures were studied by introduction of labelled  $H^3$ -thymidine for 15 minutes. The index of labelled cells was 26.4-26.7% in the chronically infected culture and 38% in the control culture. It was found that, over a period of 48 hours, both types of cultures possessed the same proliferated pool of close to 100%. The chronically infected HEp-2-Sof culture was found to have a longer mitotic cycle (17 hours) than the uninfected culture. The mitotic index was 3.60-3.90% in the HEp-2 culture and 2.50-2.57% in the HEp-2-Sof culture. It is proposed that the synthesis of antiviral albumin by cells of the chronically infected cultures may be one of the reasons for the decrease in cell metabolism and the prolongation of the mitotic cycle.

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USSR

UDC: 621.378:681.332.5

GIBIN, I. S., NEZHEVENKO, Ye. S., POTATURKIN, O. I., and TVERDO-KHLEB, P. Ye.

"Coherent Optical Device for Generalized Spectral Analysis of Images"

Novosibirsk, Avtometriya, No 5, 1972, pp 3-9

Abstract: This paper offers a method of generalizing spectral analysis of images by using holographic methods of storing and processing information realized by coherent optical techniques. This spectrum is defined as the expansion of a function describing the image in a generalized Fourier series. Although the problem can be done with a computer, it is often best to use optical analyzers because the objects of the analysis are basically optical images. To generalize the spectral analysis, holographic methods are used in the present paper for storing and processing information; a scalar mechanism is used for storage, and the correlation mechanism of Gabor is used for the processing. Both these methods are analyzed and the synthesis of the images discussed. The authors find that their coherent optical system has high memory capacity,  
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USSR

UDC: 621.378:661.332.5

GIBIN, I. S., et al, Avtometriya, No 5, 1972, pp 3-9

high velocity in analysis, and improved noise immunity.

2/2

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1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EFFECT OF THE NATURE OF DIFFICULTY SOLUBLE HYDROXIDES ON THE  
ADSORPTION OF THALLIUM, I -U-  
AUTHOR-(02)-PLOTNIKOV, V.I., GIBOVA, E.G.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK. KAZ. SSR, SER. KHIM, 1970, 20(2), 12-19  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDROXIDE, THALLIUM, ADSORPTION, MAGNESIUM, LANTHANUM,  
GALLIUM, ZIRCONIUM, IRON, TITANIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/1341 STEP NO--UR/0360/70/020/002/0012/0019  
CIRC ACCESSION NO--AP0121834  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121834

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPPTN. OF TL(I) WITH  
HYDROXIDES OF METALS SHOULD BE APPROACHED FROM THE POINT OF VIEW OF ACID  
BASE INTERACTIONS WHICH RESULT IN THE FORMATION OF SOLID SOLNS. OF THE  
RESP. CHEM. COMPOS. IN AN EXCESS OF THE HYDROXIDE. THE COPPTN. OF TL  
WAS A FUNCTION OF THE CHARACTER OF THE HYDROXIDE CARRIER AND INCREASED  
IN THE ORDER MG, LA SMALLER THAN Y SMALLER THAN GA SMALLER THAN YB  
SMALLER THAN TH SMALLER THAN ZR SMALLER THAN FE SMALLER THAN TI.  
FACILITY: INST. YAD. FIZ., ALMA ATA, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--COPRECIPITATION OF SMALL AMOUNTS OF GALLIUM WITH SOME METAL  
HYDROXIDES -U-  
AUTHOR-(04)-PLOTNIKOV, V.I., GIBOVA, E.G., KOCHETKOV, V.L., CHINAIEVA, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1970, 26(2), 67-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--GALLIUM, HYDROXIDE, ALUMINUM COMPOUND, IRON COMPOUND, TITANIUM  
COMPOUND, ZIRCONIUM COMPOUND, CHEMICAL PRECIPITATION, RARE EARTH  
COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1981/0440 STEP NO--UR/0031/70/026/002/0067/0068  
CIRC ACCESSION NO--AP0050461  
UNCLASSIFIED



2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0050461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE NATURE OF THE HYDROXIDE COLLECTOR ON THE COPPTN. OF GA WAS STUDIED. THE COPPTN. INCREASES WITH HYDROXIDES OF THE FOLLOWING METALS AL IS LESS THAN SC IS LESS THAN FE IS LESS THAN TI IS LESS THAN ZR IS LESS THAN TH. AT THE BEGINNING OF MAX. PPTN. OF GA (PH 6), THE HYDROXIDES ARE NEARLY COMPLETELY PPTD. IN THE CASE OF LA AND MG, THE COPPTN. CURVE IS MORE COMPLEX. AN INCREASE IN PH LEADS TO THE DISSOLN. OF THE GA HYDROXIDE PPT. BUT WITH THE BEGINNING OF PPTN. OF LA AND MG HYDROXIDES, IT IS AGAIN PPTD. THE COPPTN. OF GA WITH HYDROXIDES OF THE RARE EARTH ELEMENTS INCREASES IN THE SERIES ER IS LESS THAN DY IS LESS THAN TB IS LESS THAN GD. THE COPPTN. OF GA DEPENDS ON THE NATURE OF THE HYDROXIDE COLLECTOR. GA IS CAPTURED BY THE METAL HYDROXIDES FORMING COMPOS. OF THE GALLATE TYPE. THE EFFECT OF THE ORDER OF MIXING OF THE SOLNS., TEMP., AMTS. OF GA AND COLLECTOR IN THE SAMPLE, CONCN. OF SALTS, ETC. DIFFERS LITTLE FROM LITERATURE DATA, E.G., FOR IN.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--EXPERIMENTAL STUDY OF THE EFFECT OF CARBOCROMEN ON THE ISCHEMIC  
MYOCARDIUM -U-  
AUTHOR--(C4)--DZHAVAKHISHVILI, N.A., KOBALADZE, S.G., GIBRADZE, T.A.,  
TSAGARELI, Z.G.  
COUNTRY OF INFO--USSR  
SOURCE--ARZNEIM., FERSCH. 1970, 20(3A), 440-1.  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, DOG, ARTERY, CARDIOVASCULAR DRUG, DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605015/F02 STEP NO--GY/0000/70/020/003/0440/0441

CIRC ACCESSION NO--AP0140632

UNCLASSIFIED

2/2 019  
CIRC ACCESSION NO--AP0140632

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. IN DOGS WITH EXPTL. CARDIAC  
INFARCTION PRODUCED BY LIGATION OF THE ANTERIOR DESCENDING CORONARY  
ARTERY; CARBOCROMEN ENHANCED VASCULARIZATION, MAINTAINED INTACT MUSCLE  
FIBERS, INCREASED RETROGRADE BLOOD FLOW AND LYMPH DRAINAGE, AND RESTORED  
VASCULAR PERMEABILITY IN THE INFARCTED AREA. FACILITY: A. N.  
NATISHVILI INST. EXPTL. MORPHOL., TBILISI, USSR.

UNCLASSIFIED

USSR

UDC 615.281:8:547.775

3

SARATIKOV, A. S., YAVOROVSKAYA, V. YE., PRISHCHEP, T. P., BLAGERMAN, S. K., KISELEVA, V. N., IL'INSKIY, N. N., and GICHEVA, T. A., Chair of Pharmacology, Tomsk Medical Institute, Tomsk, and Chair of Microbiology, Novosibirsk Medical Institute, Novosibirsk

"The Antivirus Effect of Some Pyrazolone Derivatives in a Cell Culture in Vitro"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 67-73

Abstract: In experiments carried out with human fibroblast cell cultures, butadion, stearic acid antipyrylamide, and p-aminobenzoic acid N-methyl-N-antipyrylamide had an antivirus effect on the Cocksackie A13 virus with which the cell culture was infected. This effect was due to the formation by the culture cells of an inhibitor which was not identical with interferon, because it was inactivated at pH 2.2. The pyrazolone derivatives studied stimulated the functional activity of the culture cells and did not damage their nuclear structures. These derivatives had no bactericidal effect on hemolytic streptococci. However, the culture liquid containing the inhibitor had a bacteriostatic effect on these streptococci. Hemolytic streptococci are often present together with Cocksackie virus A 13 in patients with rheumatic fever, particularly in the acute stage of this disease.

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USSR

UDC 576.858.23(Coxsackie)

YAVOROVSKAYA, V. YE., BALANDINA, A. M., and GICHEVA, T. A., Medical Institute  
Novosibirsk

"A Study of Some Genetic Traits of Coxsackie A13 and A18 Viruses Circulating  
Under Natural Conditions. A Study of Reproductive Activity and Thermal  
Resistance"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 1972, pp 480-482

Abstract: Genetic traits of wild Coxsackie A13 and A18 viruses were compared with those of viruses obtained from rheumatic patients in order to reveal any possibilities for differentiating between these groups of viruses. Results indicated that traits describing thermal resistance are identical for almost all 11 strains investigated. All viruses had reduced reproduction at 24°C and were relatively unaffected at 40°C. At 32°C 2 subgroups had relatively unaffected reproduction and 1 revealed reduced reproduction. Heating for 1 hour at 50 and 56°C decreased reproduction of all strains. Thermal resistance in the presence of  $Mg^{2+}$  was relatively unaffected, while heating at 50°C at pH 2.0 and 12.0 reduced thermal resistance of all strains. Basic medium had a more rapid inactivating effect than acid medium. Similarity in thermal resistance responses prevents employment of these traits for differentiating the strains tested.

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USSR

UDC 547.26'119

GIGAURI, R. D., CHACHAVA, G. N., CHERNOKAL'SKIY, B. D., UGULOVA, H. M.,  
Tbilisi State University; Kazan' Institute of Chemical Technology imeni S. M.  
Kirov

"Synthesis of Diphenylalkylarsines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1537-1540

Abstract: The effect of Grignard's reagent on diphenylarsine oxide was studied. It was found that this reaction produces diphenylalkylarsines in low yields. Phenylmagnesium bromide reacted with arsenous acid anhydride to give diphenylchloroarsine in high yield after dissociation with excess hydrochloric acid. Grignard's reagent acted on diphenylchloroarsine to give the corresponding diphenylalkylarsines. The mean atomic refraction of arsenic in diphenylalkylarsines was calculated. It was found that in these compounds  $AR_pAs = 12.10$ .

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Organometallic Compounds

USSR

UDC 547.26.119

KAMAY, G. KH., UGULAVA, M. M., ~~GIGAURI, R. D.~~, INDZHIYA, M. A.,  
CHACHAVA, G. N., Tbilisi State University

"Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61,  
No 1, Jan 71, pp 61-64

Abstract: The authors studied the reaction of some secondary alcohols and arsenic trioxide, as well as properties of the resultant esters. Heating of an arsenic trioxide suspension in an alcohol-octane mixture gives tri-sec.-alkyl arsenites. The latter react with acetic anhydride to give dialkoxyarsinoacetates and two esters of acetic acid. Tri-sec.-alkyl arsenites react with acetyl chloride to give acid chlorides of di-sec.-alkylarsenous acid. The article lists properties of the resultant compounds.

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Organometallic Compounds

USSR

UDC 547.26.119

KAMAY, G. Kh., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A., CHACHARA, G. N., Tbilisi State University

"Concerning Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971, pp 61-64

Abstract: The tri-sec-alkyl esters of arsenous acid, as prepared from arsenous acid anhydride and secondary alcohols, were investigated. A suspension of a arsenous acid anhydride in a mixture of the secondary alcohol in n-octane was heated. The resulting tri-sec-alkylarsenites then react with acetic acid anhydride to form dialkoxyarsinoacetates. Tri-sec-alkylarsenites also react with acetyl chloride. Di-sec-alkoxy-arsinoacetates and especially di-sec-alkylarsinous acid chloride are vesicants. The physical constants of eight compounds are presented.

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Organometallic Compounds

UDC 546.26'11

USSR

GIGAURI, R. D., CHACHAVA, G. N., CHERNOKAL'SKIY, B. D., and UGULAVA, M. M.,  
Tbilisi State University and Kazan' Chemical Technological Institute Imeni  
S. M. Kirov

"Synthesis of Diphenylmethylalkylarsonium Perchlorates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 835-836

Abstract: To a solution of 2.0 g of diphenylmethylamylarsonium iodide in a 1:1 mixture of acetone and distilled water, aqueous solution of 2.2 g of magnesium perchlorate was added. The reaction mixture was left standing for 24 hrs at room temperature precipitating diphenylamylarsonium perchlorate which after washing, drying and recrystallization from ethanol melted at 59-60°. A series of homologous compounds was synthesized by this reaction.

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Organometallic Compounds

USSR

UDC: 547.26.119

GIGAURI, R. D., and UGJLAVA, M. M.

"The Problem of the Synthesis of Arsenous Acid Esters"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 3, Dec 70,  
p 587

Abstract: To determine optimal conditions for the synthesis of arsenous acid esters the azeotropic rectification method was applied using n-octane and n-decane. An approximately 90% gain in the yield was obtained. For the first time the following esters were synthesized: tri-(3-methyl-2-butyl)-, tri-(2-amyl)-, tri-(n-heptyl)-, and tri-(2-heptyl)-arsenates.

USSR

UDC 547.26'119

GIGAURI, R. D., KAMAY, G. Kh. (deceased), and UGULAVA, M. M., Kazan' Chemical Technological Institute imeni S. M. Kirov and Tbilisi State University

"Synthesis of Tri-sec-Alkyl Arsenites and Their Reactions With Acetic Anhydride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 336-337

Abstract: Tri-sec-alkyl arsenites are formed in good yields in the reaction of arsenic trioxide with corresponding alcohols, the water formed being removed azeotropically. A mixture of 25.4 g of arsenic trioxide, 100 g 4-octanol and 30 ml of octane was heated for 6-7 hrs in a flask equipped with a Dean-Stark trap yielding tri 4-octyl arsenite (I) after 6.2 g of water had been collected in the trap. Reaction of (I) with acetic anhydride gave dialkoxyarsinyl acetate.

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- 25 -

USSR

UDC 615.37.033

GIGAURI, V. S., VINNITSKIY, L. I., and POPOVA, Ye. B., Scientific Research  
Institute of Clinical and Experimental Surgery, and First Moscow Medical  
Institute imeni I. M. Sechenov

"Agent Resorption Rate in Tissues After Needleless Injection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973,  
pp 93-95

Abstract: The resorption rates of physiological solution labeled with  $Xe^{133}$  injected subcutaneously, intradermally, and intramuscularly with a BI-1 needleless injector and a conventional needle were compared. Resorption rates were about equal for both methods with intradermal injection, and the rates for the needleless injector were 1.7 times higher with subcutaneous injection and 3.6 times higher with intramuscular injection. X-ray studies revealed that the surface area of agent in contact with tissues is greater when administered with the needleless injector than with the conventional needle. It is suggested that this greater agent-tissue contact causes the faster resorption rate.

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UDC 615.216.5.076:612.816

GICAURI, V. S., PADALKO, V. V., MIRONOVA, Z. P., and POPOVA, YE. B., Department of Experimental Surgery, Scientific Research Institute of Clinical and Experimental Surgery, and Chair of Pathological Physiology, First Moscow Medical Institute imeni I. M. Sechenov

"Control of the Degree of Muscle Relaxation"

Moscow, Khirurgiya, Vol 3, Mar 71, pp 101-104

Abstract: Muscle relaxation during surgery is of paramount importance. The amount of muscle relaxants administered should be large enough to prevent re-appearance of muscle tonus and twitches during surgery, but it should not be so large as to complicate postoperative recovery. Since the degree of muscular relaxation is judged by clinical signs, we decided to investigate whether electromyographic records representing transmission across neuromuscular junctions might not be a more objective and precise index of the degree of muscular relaxation. For this purpose, tests were done on laboratory dogs anesthetized with modern anesthetics. Electromyograms were recorded continuously and a record of clinical signs was kept while muscle relaxants (Ditiline and Tubarine) were administered in definite doses at definite time intervals. The results showed no correlation between the clinical signs of muscular

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GIGAURI, V. S., et al., Khirurgiya, Vol 3, Mar 71, pp 101-104

relaxation and the magnitude of the electromyograms which fluctuated at random between 0 and 88%. Evidently, synaptic conductivity in peripheral muscles reflects only the local effect of the relaxants but not the relaxation of the body as a whole. Therefore, the clinical signs of muscular relaxation must still be relied upon, though they may be used in conjunction with other parameters, including electromyograms.

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Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-7c

243789 AUTOMATIC RELAXATION is achieved by in-  
jecting a relaxant during electrically  
induced muscular movement. The relaxant is  
introduced while changing the intrapulmonary  
pressure in an enclosed artificial lung ventilation  
system by contracting the diaphragm to a required  
extent by periodic electric stimulation of the  
diaphragm nerve. This produces the required depth  
of relaxation while using the minimal dose of  
relaxant. 13.6.67. as 1161552/31-16, GIGAURI, V.S.

et al. Clinical & Experimental Surgery Res. Inst.  
(30.9.69) Bul. 17/14.5.69. Class 30k. Int. Cl.  
A 61m.

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Gigauri, V. S.; Berlin, A. Z.; Perel'mutr, A. S.; Nemerovskiy, L. I.;  
Smolyarov, B. V.

Nauchno--Issledovatel'skiy Institut Klinicheskoy i Eksperimental'noy  
Khirurgii

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FACILITY FOR THE MECHANICAL TESTING OF MATERIALS  
IN A COMPLEX STRESSED STATE UNDER LOW-TEMPERA-  
TURE CONDITIONS (USTANOVKA DLIA MEKHANICHESKIKH  
ISPYTANII MATERIALOV PRI SLOZHNOM NAPRIAZHENNOM  
SOSTOIANII V USLOVIIAKH NIZKIKH TEMPERATUR).

A. A. Lebedev and F. F. Giniak

IN: THERMAL STABILITY OF MATERIALS AND STRUCTURAL  
ELEMENTS; AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT  
PROBLEM PROCHNOSTI, ALL-UNION SCIENTIFIC-TECHNICAL  
CONFERENCE, 5TH, KIEV, UKRAINIAN SSR, DECEMBER 1967,  
TRANSACTIONS. NUMBER 5 (TERMOPROCHNOST' MA-  
TERIALOV I KONSTRUKTIVNYKH ELEMENTOV; AKADEMIIA  
NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI,  
VSESOUZNOE NAUCHNO-TEKHNIЧЕСKOE SOVESHCHANIE,  
5TH, KIEV, UKRAINIAN SSR, DECEMBER 1967, MATERIALY.  
NUMBER 5). (A70-17026 05-32)

19680442

AT0028951

Edited by G. S. Pisarenko.

Kiev, Izdatel'stvo Naukova Dumka, 1969, p. 463-466. In Russian.

Description of a facility for testing thin-walled tubular samples at temperatures as low as -180 deg C. In this facility, the stresses applied to the sample are kept constant with the aid of a helical gear that converts the loading stresses into an axial force and a torque.

V.P.

*Sw*

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6 UDC 577.475.(285)

OSTAPENYA, A. P., and GIGINYAK, YU. G. (Byelorussian State University  
imeni V. I. Lenin)

"Seasonal Changes in Caloric Value of Lake Plankton"

Minsk, Doklady Akademiyi Nauk BSSR, Vol 14, No 1, Jan 70, pp 77-79

Abstract: Plankton from five Byelorussian fresh water lakes was collected every month during all seasons of the year. Comparative tests were performed on plankton obtained during the warm season and those obtained during cold season. It was concluded that the caloric value of plankton, measured by dry weight is 10-50% higher in winter. The lipid content in the summer averages 9.33%; in winter the lipid content of plankton, is as high as 46% (in one instance - Diaptomus graciloides it was 51%). From these data it is evident that the accumulation of lipids by plankton during the cold season accounts for their increased caloric value in winter months.

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USSR

UDC: 681.3.06:51

GANEYEV, D. G., GIGLAVYY, A. V., KANDALOVA, N. S., MURTAZI, R. F., MUKHINA, V. N., NEPOCHATYKH, D. P., SURINOVA, R. V.

"An Operational System Oriented for Use in the ASUP Management Systems for ASVT Computer Systems Models"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo  
(Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1970, vyp. 5, pp 36-44 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V837)

Translation: The paper describes the fundamental principles which lie at the base of development of a small operational system designed for use in the development and operation of ASUP automated systems for management of enterprises with production of discrete type based on an aggregated system of computer facilities (ASVT). An ASVT mnemocode with a set of macro-commands is used as the programming language in the proposed operational system. The principal functions, make-up and working singularities of the operational system are presented. V. Mikheyev.

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USSR

UDC: 681.3.06:51

GIGLAVYY, A. V., MURTAZI, R. F.

"On the Problem of Developing an Operational System Oriented Toward Use in the ASUP System"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo  
(Works of the Scientific Research and Design Institute on Introducing  
Computer Technology Into the National Economy), 1970, vyp. 5, pp 12-35  
(from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V595)

[No abstract]

USSR

UDC 681.3.06:51

GIGLAVYY, A. V.

"Methods of Control of an Information File in the Operational System of the ASVT M-2000 Computer"

Tr. N.-i. i Projektn. In-ta po Vnedreniyu Vychisl. Tekhn. v nar. Kh-vo [Works of Scientific Research and Planning Institute for Introduction of Computer Equipment to the Economy], No 5, 1970, pp 45-54, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V796 by V. Mikheyev).

Translation: The information file in the operational system of the M-2000 computer complex is defined as a set of files formulated in correspondence with the standards of the operational system and placed on external information carriers. A set of characteristic problems arising in the process of control of the entire information file of the operational system is studied, and the program solving some of these problems is briefly described.

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UDC 669.15'74-194:669.017.3

GIGORKIN, V. I., Lipetsk Branch of Moscow Institute of Steel and Alloys

"Influence of Carbon and Manganese on Phase Transformations of Manganese Alloys"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 127-131

Abstract: In this article the author studies the phase transformations of manganese alloys prepared from chemically pure components with different amounts of carbon and manganese. The binary alloys treated for the solid solution have the following structure:  $\gamma + \alpha'$ ;  $\gamma + \epsilon + \alpha'$ ;  $\gamma + \epsilon$ ; and  $\gamma$ . The boundaries of these regions are arbitrary and are determined by the degree to which they are alloyed: approximately 8, 16, and 30% Mn. In the binary Fe-Mn alloys there is one interval of direct  $\gamma \rightarrow \alpha'$ ,  $\gamma \rightarrow \epsilon$  and inverse  $\alpha' \rightarrow \gamma$ ,  $\epsilon \rightarrow \gamma$  transformations.

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GIGORKIN, V. I., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 127-131

The temperature for the onset of these transformations is lowered with increase in manganese concentration. In the ternary Fe-Mn-C alloys there are two temperature intervals of the direct  $\gamma \rightarrow \alpha'$ ;  $\gamma \rightarrow \alpha''$  and inverse  $\alpha' \rightarrow \gamma$ ,  $\alpha'' \rightarrow \gamma$  transformations. The temperature of the onset of the  $\gamma \rightarrow \alpha'$  and  $\alpha' \rightarrow \gamma$  transformations does not depend on the carbon concentration, and with an identical amount of manganese the temperature of these transformations coincides in the Fe-Mn and Fe-Mn-C alloys. Carbon and manganese sharply reduce the temperature of the  $\gamma \rightarrow \alpha''$  transformation.

The authors give several graphs illustrating the above discussions.

The article contains 6 illustrations, 1 table, and 12 bibliographic references.

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Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239444 PHASE METER FOR BALANCED INSTRUMENTS in which the revolving shaft, under test is connected to magnet (2) mounted inside bipolar electromagnet (3) energised by impulses from oscillator (11) in the collector circuit of transistor (12). The position of shaft (5) responds to the phase shift between the oscillator and shaft (1).

6.6.67 as 1161362/18-10. L.D. GIK & V.N.NEKURIASHCHE  
AUTOMATION & ELECTROMETRY INST. SIBERIAN SECT.ACAD.  
SCIENCES USSR. (24.7.69) Bul 11/18.3.69. Class 21e.  
Int.Cl. G 01r.

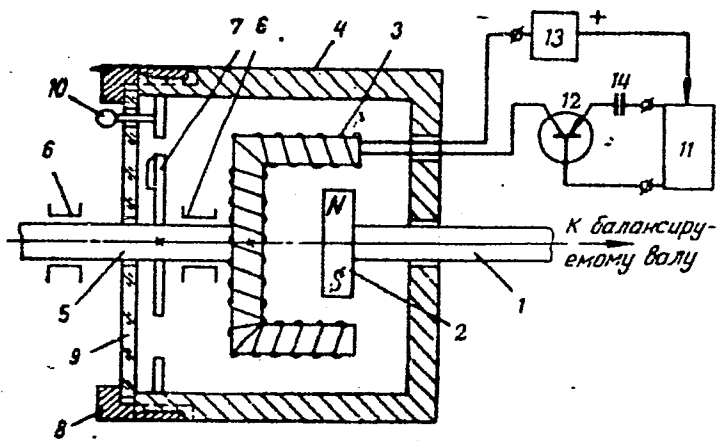
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AUTHORS: Gik, L. D.; Nekuryashchev, V. N.

1/2 Institut Automatiki i Elektrometrii Sibirskogo Otdeleniya  
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NEKRASOV, M. M., OSADCHUK, V. S., GIKAVYY, V. A.

UDC 681.142

"Problem of Inductive Behavior of Superhigh Frequency Transistors"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 74-76

**Abstract:** A study was made of the inductive nature of the behavior of the input impedance of a high-frequency transistor with variation of the feed conditions and the signal frequency. The possibility of controlling the active and reactive parts of the input impedance by means of the emitter current and the external base resistance is demonstrated experimentally. Curves are presented illustrating these conclusions. Both the active and reactive components of the input impedance of the transistor element increase with an increase in the instrument multiplier in the base circuit in accordance with the formula

$$Z = r_e + r_b \left[ 1 - \frac{\alpha_0}{1 + (\omega/\omega_\alpha)^2} \right] + j \frac{r_b \alpha_0 (\omega/\omega_\alpha)}{1 + (\omega/\omega_\alpha)^2}$$

where  $\omega$  is the operating frequency,  $\omega_\alpha$  is the limiting frequency of the amplification coefficient with respect to current in a circuit with a common base, 1/2

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